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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,736

02/19/2004

Yoshiharu Doi

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McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

ALAM, FAYYAZ

ART UNIT	PAPER NUMBER
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2618

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09/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/780,736	Applicant(s) DOI, YOSHIHARU	
	Examiner FAYYAZ ALAM	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to applicant's amendment/arguments filed on 6/17/2009. **This action is made FINAL.**

Response to Arguments

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Please see rejection below in light of the amendment and arguments.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Consider all the independent claims, the limitations recite "...virtual terminal apparatuses which are not present in reality...assumed to be imaginarily present...". The limitations present new matter since according to the specifications, a virtual apparatus may be present and therefore, not

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necessarily be imaginary or not real, and in addition, the apparatus will be real whether present or not in a give range of coverage. In fact, according to figure 6 a virtual apparatus exists in reality. Applicant needs to properly comply with the definition of the virtual or potential apparatus in order to avoid new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "the targeted terminal apparatus" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-4, 10-13, and 18- 20 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hind et al. (USPN 2004/0203908)**.

Consider **claim 10**, Hind discloses a transmission method comprising: assuming that a plurality of virtual terminal apparatuses which are not a terminal apparatus which is a real targeted communication party are present in respective predetermined directions (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; where measurement points 1 and 2 are not the targeted client devices); generating a transmission weight vector used in transmitting a predetermined signal to a terminal apparatus which is the real targeted communication party, from a received response vector of the targeted terminal apparatus and a first virtual response vector of one of the plurality of virtual terminal apparatuses (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; where a configurable boundary is defined in order to provide communication to a desired terminal 110 based on the determination of the position vectors of the desired terminal and the measurement points), virtual response vectors being stored in advance, and performing a control in such a manner that the first virtual response vector is changed (see table 700 which is stored in the base station and each vector is used to determined client's position and compare the position to the defined boundary), as appropriate, to a second virtual response vector having a different value from that of the first virtual response vector so as to change from one of the predetermined directions in which the virtual terminal apparatuses are present to another direction (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; "as

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appropriate” examiner interprets that its **not appropriate** and therefore, the limitation does not need to be addressed).

Consider **claims 2, 11, and 18**, Hind discloses a radio apparatus, including: a computing unit which computes a received response vector of a terminal apparatus which is a targeted communication party, based on signals received from the targeted terminal apparatus (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; a position of the client apparatus is determined based on the received signals from the client devices); an acquiring unit which acquires one of virtual response vectors with respect to corresponding of one of a plurality of virtual terminal apparatuses which are not the terminal apparatus which is the targeted communication party, the virtual response vectors being stored in advance such that the predetermined directions in which the plurality of virtual terminal apparatuses exist are mutually different from each other (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; table 700 is stored in the base station and it includes measurement point positions in advance at different locations); a generator which generates a transmission weight vector based on the received response vector computed by said computing unit and the virtual response vector acquired by said acquiring unit (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; transmission from the base station is carried out based on the computed client device position and reported measurement point positions); and a transmitter which transmits a predetermined signal to the targeted terminal apparatus based on the transmission weight vector generated by said generator (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; base station transmits to the client

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device that is within the defined boundary), wherein said acquiring unit acquires again, as appropriate, another virtual response vector such that one of the predetermined directions in which the one of the virtual terminal apparatuses exists is changed to another direction, and the thus reacquired virtual response vector is again subject to processes by said generator and said transmitter (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; “as appropriate” examiner interprets that its **not appropriate** and therefore, the limitation does not need to be addressed).

Consider **claims 3, 12, and 19** as applied to respective claims, Hind discloses wherein said acquiring unit reacquires, as appropriate, another virtual response vector whose value of correlation with the received response vector computed by said computing unit is less than or equal to a predetermined threshold' value, and the thus reacquired virtual response vector is again subject to the processes by said generator and said transmitter (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

Consider **claims 4, 13, and 20** as applied to respective claims, Hind discloses wherein said acquiring unit further includes: a storage which stores the virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value; and a selector which selects a virtual response vector from the virtual response vectors stored in said storage (see abstract; figs. 2-3, 7 and associated text; [0034-0042; 0047]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hind et al. (USPN 2004/0203908)** in view of **Ahl et al. (USPN 5,448,753)**.

Consider claims 1, 8, and 9, Hind discloses a radio apparatus characterized in that: a plurality of virtual terminal apparatuses which are not a terminal apparatus which is a real targeted communication party, (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; measurement points 1 and 2 are not client devices or targeted communication party); an antenna's directional pattern is formed such that signal strength in one of the predetermined directions in which corresponding one virtual terminal apparatuses is present is relatively small (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; a coverage boundary is defined where client devices within the boundary are provided with service and the devices outside are not and the

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measurement points 1 and 2 receive a relatively small signal strength); and a signal is transmitted to the terminal apparatus which is the real targeted communication party to prevent each of the plurality of virtual terminal apparatuses from receiving a signal (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]; where a signal is only transmitted to the client device within the boundary and no transmission to the measurement points take place).

However, Hind does not explicitly disclose mobile devices from continuously receiving signals changing the directional patterns from one direction to another direction.

In the related field of endeavor, Ahl discloses mobile devices from continuously receiving signals changing the directional patterns from one direction to another direction (see figs. 9-10 and 13-20 and associated text; abstract; where beam pattern in a given cell is changed from one direction to another).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Hind with the teachings of Ahl in order to minimize and avoid interferences (see col. 1, lines 60-65).

Claims 5-7, 14-17, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hind et al. (USPN 2004/0203908)**.

Consider **claims 5, 14, and 21** as applied to respective claims, Hind discloses further including: a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and an intensity determining unit which instructs said acquiring unit to switch to the virtual response vector whose value of correlation

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with the received response vector computed by said computing unit becomes less than or equal to a predetermined threshold value (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

However, Hind does not explicitly disclose switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

Nevertheless, it would be obvious to a person of ordinary skill in the art to switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value in order to determine another intercepting or unintended communication terminal by regularly switching and not dwelling on a single intercepting communication terminal.

Consider **claims 6, 15, and 22** as applied to respective claims, Hind discloses further including: a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and an intensity determining unit which instructs said acquiring unit transmitter to increase the intensity of signals to be transmitted to the targeted terminal apparatus (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

However, Hind does not explicitly disclose switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

Nevertheless, it would be obvious to a person of ordinary skill in the art to increase the signal strength if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value in order to determine another intercepting or unintended communication terminal by regularly switching and not dwelling on a single intercepting communication terminal.

Consider **claims 7, 16, 17, 23, and 24** as applied to respective claims, Hind discloses wherein said intensity determining unit estimates the signal strength value of the targeted terminal apparatus from a value of correlation between the received response vector and the virtual response vector (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

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Examiner should be directed to Fayyaz Alam whose telephone number is (571) 270-1102. The Examiner can normally be reached on Monday-Friday from 9:30am to 7:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Fayyaz Alam

August 18, 2009

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618